American Museum of Natural History
Center for Biodiversity and Conservation

Advancing tools for an integrated biodiversity monitoring system for Colombia's protected areas

NASA

Parques Nacionales Naturales de Colombia

Instituto Humboldt Colombia

Temple University

GEO BON

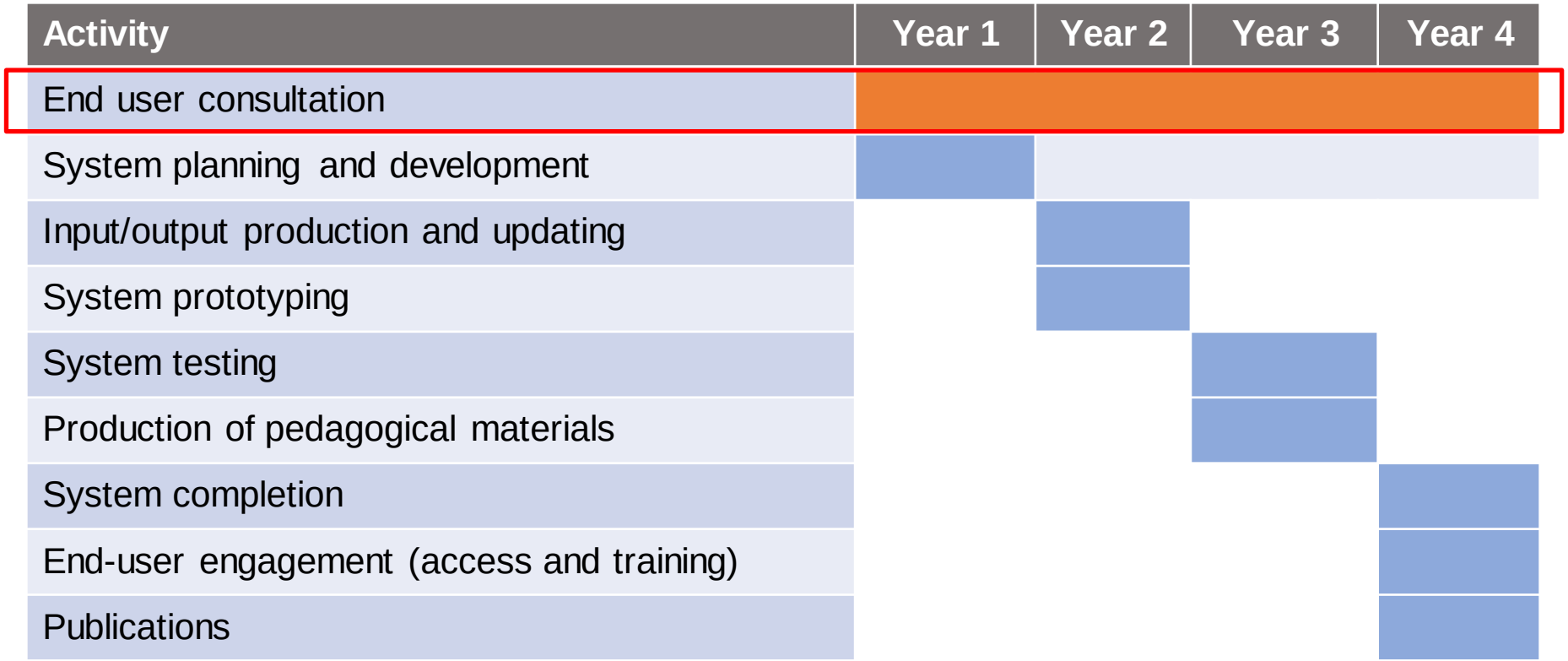
NASA A.39 Integrated Biodiversity Monitoring System

Goal:

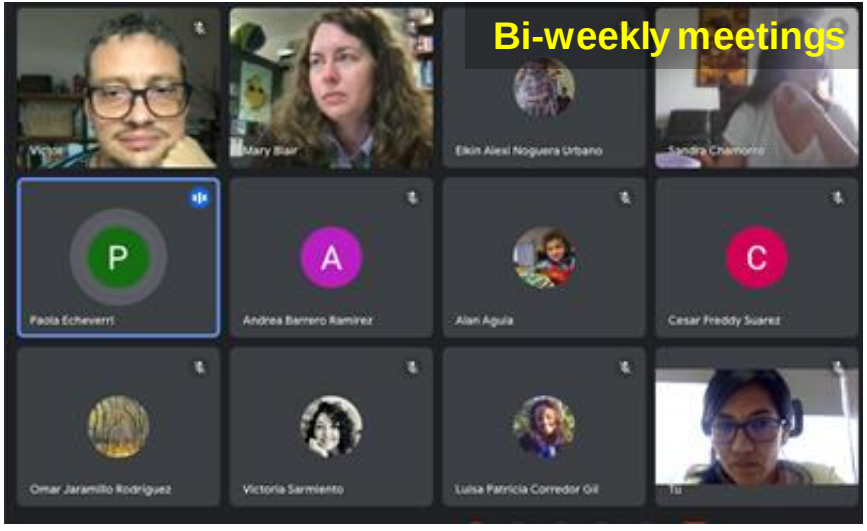
To support the implementation of a dynamic biodiversity monitoring system that integrates available processing tools and Earth Observation capabilities for biodiversity decision-making in Colombia.

Timeline

Duration: September 2021 – August 2025




Bogotá, May 2022


Bi-weekly meetings
Mary Blair
Elkin Alexi Noguera Urbano
Sandra Chamorro
P
Paola Echeverri
A
Andrea Barrero Ramirez
Alan Aguia
C
Cesar Freddy Suarez
Omar Jaramillo Rodriguez
Victoria Sarmiento
Luisa Patricia Corredor Gil


NYC, Nov 2022


Montería, March 2023

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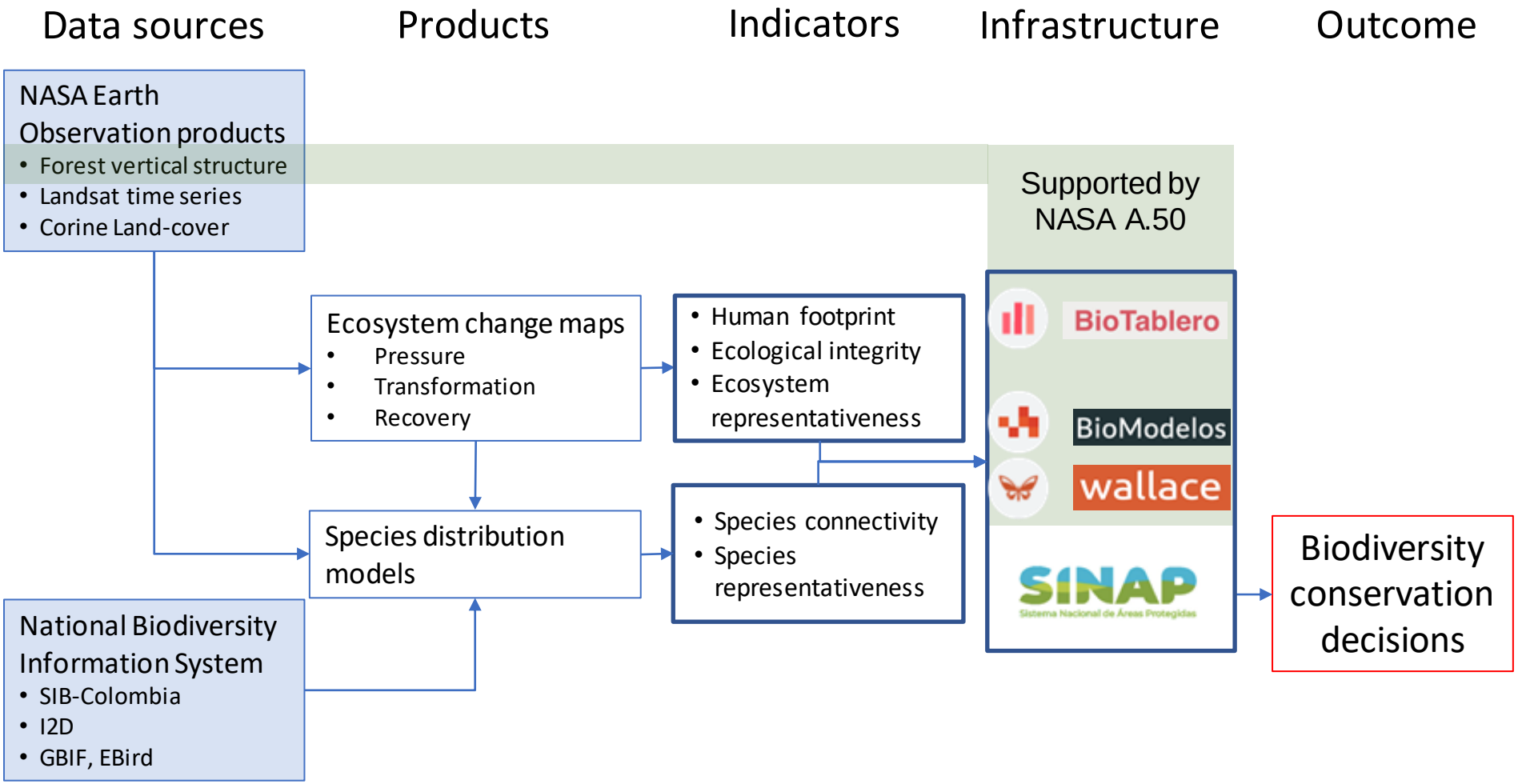
Decision-making element

- Biodiversity representativeness is key to inform decisions on area-based conservation strategies.
- Colombia has made important progress in the use of Earth Observations, processing tools, and information systems for monitoring change in ecosystems and species in the last decades.
- Yet, the integration of existing capabilities into a dynamic biodiversity monitoring system can improve access to up-to-date biodiversity indicators for timely decisions on biodiversity conservation.


Data sources
Products
Indicators
Infrastructure
Outcome
NASA Earth Observation products
• Forest vertical structure
• Landsat time series
• Corine Land-cover
National Biodiversity Information System
• SIB-Colombia
• I2D
• GBIF, EBird
Ecosystem change maps
• Pressure
• Transformation
• Recovery
Species distribution models
• Human footprint
• Ecological integrity
• Ecosystem representativeness
• Species connectivity
• Species representativeness
Supported by NASA A.50
BioTablero
BioModelos
wallace
SINAP
Sistema Nacional de Áreas Protegidas
Biodiversity conservation decisions

Activities, progress and next steps

Activity	Progress	Next steps
Integration of Earth Observation products for improved ecosystem change assessment	● Suitability evaluation of existing products for change assessment ● Prototype analytical workflow designed ● Testing in five pilot conservation areas	● Iterative workflow refinement and implementation ● Accuracy assessment

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New/improved inputs/outputs for producing biodiversity indicators	● Information needs prioritized and gaps identified ● Identified input updates needed ● Workplan finalized to fill gaps and update inputs	● Update/ calculate new inputs and indicators ● Produce future scenarios for selected indicators

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System development for timely access to biodiversity indicators	● Formal cross-institutional collaboration agreement among Colombian institutions (SIAC) to share and access inputs/outputs ● Pre-processing needs identified ● Initial system plan drafted	● Develop new system components ● Visualization improvements ● Use/usability assessment

Thank you!

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Proposed impacts

We are leveraging existing modeling and information capabilities from previous funded projects to:

- Expand technical capabilities for the integration of Earth Observation Products into Biodiversity Conservation Indicators

- Integrate existing workflows to facilitate timely access to biodiversity indicators for decision-making.